

What is claimed is:

1. An implantable device for delivering cardiac function therapy to a patient, comprising:
  - 5 sensing channels for sensing cardiac electrical activity at a plurality of myocardial sites;
  - pacing channels for delivering pacing pulses to a plurality of myocardial sites;
  - and,
  - a controller for controlling the delivery of pacing pulses in accordance with a
  - 10 programmed pacing mode and with a defined pulse output sequence and pulse output configuration for delivering cardiac function therapy;
  - wherein the controller is programmed to temporarily suspend delivery of cardiac function therapy, assess the patient's cardiac function while no cardiac function therapy is being delivered, and either re-initiate or continue the delivery of
  - 15 cardiac function therapy based upon the cardiac function assessment.
2. The device of claim 1 wherein the cardiac function therapy is multi-site ventricular pacing which improves the patient's cardiac pumping performance.
- 20 3. The device of claim 1 wherein the cardiac function therapy is multi-site ventricular pacing which pre-excites selected myocardial regions in order to redistribute myocardial wall stress during systole for the purpose of reversing ventricular remodeling.
- 25 4. The device of claim 1 further comprising a sensor for measuring cardiac output and wherein the cardiac function assessment includes comparing the measured cardiac output to a specified threshold value.
5. The device of claim 4 wherein the cardiac output sensor is a trans-thoracic
- 30 impedance measuring circuit.

6. The device of claim 4 further comprising an exertion level sensor and wherein the cardiac function assessment includes comparing a function of the measured cardiac output and measured exertion level to a specified threshold value.

5 7. The device of claim 1 wherein the cardiac function assessment includes an assessment of the patient's autonomic balance by measuring the patient's heart rate variability.

8. The device of claim 7 further comprising:

10 circuitry for measuring and collecting time intervals between successive chamber senses and storing the collected intervals as a discrete RR interval signal, filtering the RR interval signal into defined high and low frequency bands, and determining the signal power of the RR interval signal in each of the low and high frequency bands, referred to LF and HF, respectively; and,

15 circuitry for computing an LF/HF ratio and assessing cardiac function by comparing the LF/HF ratio to a specified ratio threshold value.

9. The device of claim 1 wherein the controller is programmed to temporarily suspend delivery of cardiac function therapy and assess the patient's cardiac function  
20 upon a command from an external programmer.

10. The device of claim 1 wherein the controller is programmed to temporarily suspend delivery of cardiac function therapy and assess the patient's cardiac function at periodic intervals.

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11. A method for operating an implantable device which delivers cardiac function therapy to a patient, comprising:

delivering pacing pulses in accordance with a programmed pacing mode and with a defined pulse output sequence and pulse output configuration for delivering  
30 cardiac function therapy; and,

temporarily suspending delivery of cardiac function therapy, assessing the patient's cardiac function while no cardiac function therapy is being delivered, and either re-initiating or continuing the delivery of cardiac function therapy based upon the cardiac function assessment.

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12. The method of claim 11 wherein the cardiac function therapy is multi-site ventricular pacing which improves the patient's cardiac pumping performance.

13. The method of claim 11 wherein the cardiac function therapy is multi-site  
10 ventricular pacing which pre-excites selected myocardial regions in order to redistribute myocardial wall stress during systole for the purpose of reversing ventricular remodeling.

14. The method of claim 11 further comprising measuring cardiac output and  
15 wherein the cardiac function assessment includes comparing the measured cardiac output to a specified threshold value.

15. The method of claim 11 wherein the cardiac output is measured by measuring a trans-thoracic impedance and heart rate.

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16. The method of claim 14 further comprising measuring the patient's exertion level and wherein the cardiac function assessment includes comparing a function of the measured cardiac output and measured exertion level to a specified threshold value.

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17. The method of claim 11 wherein the cardiac function assessment includes an assessment of the patient's autonomic balance by measuring the patient's heart rate variability.

18. The method of claim 17 further comprising:

measuring and collecting time intervals between successive chamber senses and storing the collected intervals as a discrete RR interval signal, filtering the RR interval signal into defined high and low frequency bands, and determining the signal  
5 power of the RR interval signal in each of the low and high frequency bands, referred to LF and HF, respectively; and,

computing an LF/HF ratio and assessing cardiac function by comparing the LF/HF ratio to a specified ratio threshold value.

10 19. The method of claim 11 wherein the suspension of cardiac function therapy and assessment of the patient's cardiac function are performed upon a command from an external programmer.

20. The method of claim 11 wherein the suspension of cardiac function therapy  
15 and assessment of the patient's cardiac function are performed at periodic intervals.